



## Vaccinations for Adults: Leader Guide

### Introduction

Vaccinations aren't just for kids. As we get older we are less resistant to some diseases, and vaccinations can help us fight off viruses and bacterial infections. Adults who are immunized help reduce the risk of infection in the community for others who are not yet immunized or cannot be immunized due to health reasons. Even though some diseases like polio and diphtheria are very rare in the US, we still need to continue immunizations to maintain our current level of resistance and prevent a recurrence of these diseases. <sup>1</sup> In addition, certain vaccines wane over time and thus boosters are needed to maintain our immunity. Some vaccines are specifically meant for older adults such as the shingles and pneumococcal vaccines.

### Lesson Objectives

After this lesson, participants will be able to:

- Describe why it is important for older adults to get vaccinations.
- List the types of vaccinations available and when/why they should be given.
- Describe the immunization process and its role in community health.
- List 2-3 places where they could go to get immunizations.

### Materials needed

- Examples of vaccination records or World Health Organization card (if available)
- Vaccination form: <http://www.cdc.gov/Features/AdultVaccinationRecords/index.html>
- Copies of Recommended immunization schedule for adults:  
<http://www.cdc.gov/vaccines/schedules/downloads/adult/adult-schedule-easy-read.pdf>
- Handout on Understanding How Vaccines work:  
<http://www.cdc.gov/vaccines/hcp/patient-ed/conversations/downloads/vacsafe-understand-color-office.pdf>
- Handout on Community Immunity:  
<https://www.niaid.nih.gov/topics/pages/communityimmunity.aspx>

### Teaching Instructions

1. **Read the introduction and lesson objectives above.**
2. **Discuss reasons why older adults need vaccinations.**
3. **Review and discuss handout on recommended vaccinations for adults by age and health condition.**

- *What is the difference between the green, blue and pink bars?—green are recommended for you, blue may be recommended if you have certain risk factors, pink indicates don't get the immunization due to associated risks.*
- *What risk factors might indicate that you should get pneumococcal, meningococcal, Hepatitis A, B or Hib vaccines?<sup>2</sup>*

***Pneumococcal Risk:*** Adults 65 years or older are at increased risk for pneumococcal disease. Younger adults, aged 19-64 may be at increased risk if they have a chronic illness (lung, heart, liver, or kidney disease; asthma; diabetes; or alcoholism), have a weakened immune system (HIV/AIDS, cancer, or damaged/absent spleen); live in nursing homes or other long-term care facilities; have cochlear implants or cerebrospinal fluid (CSF) leaks; or smoke cigarettes.<sup>3</sup>

***Hib Risk:*** People 65 and older are at higher risk. Other people at risk include those who have sickle cell disease, asplenia (no spleen), HIV infection, antibody and complement deficiency syndromes, or who have received chemotherapy or radiation therapy for malignant neoplasms, or hematopoietic stem cell transplant.<sup>4</sup>

***Hepatitis A (HAV) Risk:*** Groups at risk are international travelers, those who have contact with new adoptees from a high risk country, men who have sex with men, and users of illegal drugs.

***Meningococcal Risk:*** Adults age 56 years and older who (1) were vaccinated previously with MCV4 and now need revaccination or (2) are recommended to receive multiple doses (for example, adults with asplenia or microbiologists working with *Neisseria meningitidis*) should receive quadrivalent meningococcal conjugate vaccine (MCV4; Menactra, Sanofi; Menveo, Novartis). MPSV4 should be used for adults age 56 and older who have not previously received meningococcal vaccine and anticipate requiring a single dose, such as international travelers and persons at risk as a result of a community outbreak of meningococcal disease.<sup>5</sup>

#### 4. Discuss flu vaccines.

Older people are at a high risk for complications from flu. **Fluzone high dose** is an influenza vaccine designed for people 65 years and older. It has 4 times the amount of antigen contained in regular flu shots to create a stronger immune response. The **intradermal flu vaccine** is injected into the skin instead of the muscle and uses a smaller needle than the regular flu shot. It requires less antigen to be effective and may

be used for adults aged 18-64. The nasal vaccine is not approved for people older than 49 years. Immunity from vaccination sets in after about two weeks.<sup>6</sup>

- *What is the difference between influenzae and Haemophilus influenza type B? --*  
**Haemophilus influenzae type b** is a polysaccharide-encapsulated bacteria that causes a variety of invasive diseases, such as meningitis, epiglottitis, and pneumonia. **Influenza** is a virus that causes the disease **influenza**.<sup>7</sup>
- *Common respiratory viruses:* Rhinovirus (common cold), corona virus, RSV, influenza A & B, parainfluenza virus type 3, adenovirus<sup>8</sup>

5. **Discuss when and where you should get your vaccines.**

The flu vaccine changes every year and is usually available by October and throughout the flu season. Pharmacies, primary care providers, health departments, and flu clinics are the best places to get vaccines. Check with the sites to see if they have special times for giving vaccines.

6. **Discuss how vaccines work and herd immunity using handouts.**

Herd immunity can begin to come into play with as little as 40% of the population vaccinated, however, more contagious diseases require vaccination rates of 80-95%. This is the “herd immunity threshold”.<sup>9</sup>The more people that are vaccinated in the community the better the protection against diseases.

7. **Do evaluation.**

## **Background Information on Specific Vaccines**

### **Tetanus, Diphtheria, and Pertussis (whooping cough)**

**Tetanus** (lock jaw) enters the body through wounds or cuts. It can lead to muscle spasms, stiffness and lockjaw. **Diphtheria** is a serious bacterial infection usually affecting the mucous membranes of the nose and throat causing sore throat, fever, swollen glands and weakness. **Pertussis** is a respiratory disease that is highly contagious and hits babies and young children hardest.

Vaccination occurs through a series of doses of Tdap (tetanus, diphtheria and pertussis) and Td (tetanus and diphtheria). Initially children receive a 4 or 5 dose series that needs to be completed for them to have adequate coverage for tetanus. As adults if they have never been vaccinated as a child, they need to complete a 3 dose series with one of the doses, preferably the first dose being Tdap. After the initial series is completed then they just need to have a Td booster every 10 years. A booster may be recommended if there as an injury and it has been more than 5 years since the last Td shot. Adults who get the pertussis vaccine help protect infants less than 6 months old. Many adults are under-immunized for diphtheria.

## **Meningitis**

**Meningococcal vaccine** protects against a variety of diseases caused by the bacterium *Neisseria meningitides*. This bacterium is a leading cause of bacterial meningitis (meningococcal meningitis) and meningococemia (blood infection). The vaccine is recommended for members of the military, those with spleen damage, anyone traveling to a country where this disease is common, and anyone starting college who has not received the vaccine within the past five years. 1 in 10 people who get meningococcal disease die, while others may suffer brain damage or hearing loss.

## **Chicken pox (varicella) and shingles (zoster)**

**Chickenpox (varicella)** vaccine is recommended for anyone born after 1980 in the US unless they have a documented case of chickenpox or herpes zoster. Adults who get chickenpox have a higher risk of complications that may lead to hospitalization or death. The vaccine is given in two doses. This is part of the childhood vaccination schedule. The first dose is recommended between 12 and 15 months of age and the second dose is recommended at 4-5 years of age. If the child is late getting the vaccine then the shots would be administered 4 weeks apart.

**Shingles (zoster)** vaccine is recommended for all adults 60 or older regardless if they had chicken pox or not, and the FDA has licensed the vaccine for individuals 50 years or older. Shingles (herpes zoster) causes painful blisters that can cause long-term nerve damage and pain. The blisters can cause chickenpox in other people.<sup>10</sup>

## **Pneumococcal**

**Pneumococcal** vaccine protects against a variety of diseases caused by *Streptococcus pneumoniae* which may include bacteremia, meningitis and pneumonia. Doctors recommend getting vaccinated for this after age 65 unless you have one of the following risk factors: smoker or asthma (after age 19), weakened immune system, no spleen, chronic disease (heart, liver, diabetes, COPD), undergoing radiation therapy or chemotherapy or long-term steroids, living in a nursing home or long-term care facility. Pneumococcal pneumonia kills about 50,000 adults every year and can lead to bacterial meningitis. If you live in an area with increased risk of pneumococcal disease your doctor may recommend this if you are over 50.<sup>11</sup> This vaccine is very expensive and Medicare only covers a small portion of the vaccine so it may cost more than \$100. If you have private insurance, it may be covered at a higher rate and be less out of pocket for the patient.

## **Hepatitis**

**Hepatitis** has three common strains--A, B & C. The mode of transmission for Hepatitis A is fecal-oral, so that there has to be fecal contamination which is ingested through the mouth. This can occur by eating or drinking contaminated food (such as at a salad bar) or water. Contamination can occur when a food preparer who is infected has not washed their hands after using the bathroom. People with chronic liver disease or clotting factor disorders are also at risk. Hepatitis B is usually spread by contact with blood or bodily fluids from an

infected person. This can occur during unprotected sex, or by sharing a razor, needle, or other personal items. It can lead to severe liver damage or death. This vaccine is recommended for anyone with an increased risk because they suffer from or work with people that have kidney or liver diseases. Vaccines are available for Hep A& B, but not Hep C.

## **Influenza**

***Influenza*** vaccine is recommended annually for both adults and any one over age 6 months. It protects against various strains of the flu and the composition of the vaccine changes annually. The vaccine can be injected or inhaled. Adults over age 50 should receive the injectable vaccine. You can't get the flu from the flu vaccine, however you may get the flu if you had the virus before you got vaccinated, or before you had time to develop your immunity, or you had a strain not covered in the flu virus vaccine formula for that year.<sup>12</sup> The CDC recommends that most everyone get a flu shot every year because strains of the flu are constantly changing. Each vaccine year is based on 3-4 strains of the virus that are expected to be the most common.

## **Measles, Mumps and Rubella**

***Measles, Mumps and Rubella (MMR)*** vaccine can be useful for college students, health care workers, and those who travel internationally. Most Americans have either been vaccinated or had the disease, however, if you haven't you are at risk. Complications from these diseases can be pneumonia and encephalitis (inflammation of the brain). If you received a killed measles vaccine between 1963 and 1967 or an unknown type it might not be adequate protection against measles. "Roughly 30 percent of those infected with measles develop complications, some of which are life threatening. As recently as 2013, measles killed almost 150,000 children around the globe in places where the vaccine is not readily available. In 1980, before the vaccine was in wide use, measles killed over 2.5 million people every year."<sup>13</sup>

## **Travel**

If you are traveling to a country where a vaccine is required you should get it 4-6 weeks before you leave so that you develop immunity by the time you get there. Vaccines that may be required before entering certain countries include: yellow fever, typhoid, rabies, and Japanese encephalitis. The CDC Travelers health website lets the user search by destination to determine what vaccines or prophylactics may be required. Visit:

<http://wwwnc.cdc.gov/travel/destinations/list>

*This lesson was developed by Robin Maille, Family and Community Health, OSU Extension Service, 2015*

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<sup>1</sup> CDC (September, 2014) Vaccines and Immunizations-Why Immunize? <http://www.cdc.gov/vaccines/vac-gen/why.htm>

<sup>2</sup> CDC (February, 2013). Pneumococcal Disease. <http://www.cdc.gov/vaccines/vpd-vac/pneumo/downloads/dis-pneumo-color.pdf>

<sup>3</sup> CDC (June, 2015). Pneumococcal Disease: Risk Factors and Transmission. <http://www.cdc.gov/pneumococcal/about/risk-transmission.html>

<sup>4</sup> CDC (April, 2014). Haemophilus influenza Disease (Including Hib); Risk Factors: <http://www.cdc.gov/hi-disease/about/risk-factors.html>

<sup>5</sup> Immunization Action Coalition (August, 2015). Ask the Experts Diseases & Vaccines: Meningococcal Disease. [www.immunize.org/askexperts/experts\\_men.asp](http://www.immunize.org/askexperts/experts_men.asp)

<sup>6</sup> CDC (August, 2015). What you should know and do this flu season if you are 65 years and older. <http://www.dcd.gov/flu/about/disease/65over.htm>

<sup>7</sup> CDC (December, 2012). Hib Vaccine Clinical Questions and Answers. <http://www.cdc.gov/vaccines/vpd-vac/hib/vac-faqs-hcp.htm>

<sup>8</sup> Makela, et al. (1998). Viruses and Bacteria in the Etiology of the Common Cold. *Journal of Clinical Microbiology*, 1998 Feb; 36 (2): 539-542: <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC104573/figure/F1/>

<sup>9</sup> NIH National Institute of Allergy and Infectious Diseases (October, 2010). Community Immunity: <https://www.niaid.nih.gov/topics/pages/communityimmunity.aspx>

<sup>10</sup> Web MD (May, 2014). Vaccines for Adults: What You Should Know: <http://www.webmd.com/vaccines/what-you-should-know-11/slideshow-adult-vaccines>

<sup>11</sup> National Foundation for Infectious Diseases (December, 2012). Pneumococcal Disease: Hard to say it: easy to get vaccinated. <http://www.adultvaccination.org/professional-resources/public-health-toolkit/pneumo-fact-sheet-hcp.pdf>

<sup>12</sup> Web MD, Test Your Adult Vaccine IQ: <http://www.webmd.com/vaccines/video/test-your-adult-vaccine-ig>

<sup>13</sup> Dr. David Katz (2015) Measles in the Magic Kingdom: It's a Small World after all. January 23, 2015. <https://www.linkedin.com/pulse/measles-magic-kindgom-its-small-world-after-all-l-katz-md-mph>